

Work Order ID 144411

April 15, 2016 3:59:55 PM

144411

Page 1

Item ID: D117-837-011

Accept

N900040100

Setup

Start

NS1

Revision ID:

Stop

NS2

Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 5/30/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 6/17/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: *SH*Date: *20160416* Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

DSI9706-011

A

DSI9716

A

IIN-D117-837

B

*DAS
6
9-89**MW 1605-28*

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D117-837-011 CHG006

*DAS
27
9-89**MAY 27 2016*

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

*DAS
28
9-89**MAY 27 2016*

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
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OTHER : ☐																									

Work Order ID 144411

April 15, 2016 3:59:55 PM

144411

Page 2

Item ID: D117-837-011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Stop ***NS2***Start Date: 5/30/2016 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 6/17/2016 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120 QC4- 100% Inspect kits for completeness 0.00

120

QC

Memo

0.03

Quality Control

DAS
27
9-89

MAY 27 2016

130 Packaging 0.00

130

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D117-837-011
Location: _____

sold

DAS
28
9-89

MAY 27 2016

140 QC21- Final Inspection - Work Order Release 0.00

140

QC

Memo

0.10

Quality Control

MCS

MAY 27 2016

22m 16/05/27.

DQA: _____ Date: _____



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April 15, 2016 3:59:54 PM

144411

D117-837-011

Required Date: 6/17/2016

Required Qty: 1.00

Comments: IPP REV:A 13.03.28 NEW ISSUE DD VERF:JLM IPP REV:B
13.06.21 IIN-D117-837 REV.A DD VERF:JFS IPP REV:C 13.12.02
ecn 13-670/ chg002 DD VERF:JLM IPP REV:D 14.07.25 ecn 14-571/
chg003 DD VERF:JLM IPP REV:E 14.07.25 ecn 14-624/ chg004 DD
VERF:JLM IPP REV:F 15.02.02 AS PER DIS9716 DD
VERF:JLM IPP REV:G 15.05.27 now at chg006 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4911-5		Manufactured	No				Each	6.0000		2			
D4911-5									**				DAS 28
Bracket													6 9-89
				<u>Location</u>			<u>Loc Qty</u>			<u>Loc Code</u>			
				ST137			6						
				126510			6						
D5203-041		Manufactured	No				Each	0.0000		1			
D5203-041									**				DAS 28
Strut Assembly													6 9-89
D5204-1		Manufactured	No				Each	19.0000		2			
D5204-1									**				DAS 28
Bracket													6 9-89
				<u>Location</u>			<u>Loc Qty</u>			<u>Loc Code</u>			
				ST157			19						
				132999			19						
D5205-1		Manufactured	No				Each	6.0000		1			
D5205-1									**				DAS 28
Bracket													6 9-89
				<u>Location</u>			<u>Loc Qty</u>			<u>Loc Code</u>			
				ST157			6						
				139876			6						

MAY 26 2016

MAY 26 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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OTHER : ☐																									

Picklist Print

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Page 2

Work Order ID: 144411

144411

Parent Item: D117-837-011

D117-837-011

Parent Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 5/30/2016

Required Date: 6/17/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149F0832P

Purchased

No

Each

139.0000

2

DAS
6 28
9-89 9-89

NAS1149F0832P

WASHER

BAS
27
9-89

Location

Loc Qty

Loc Code

ST262

139

18057

139

D117-837-111

Manufactured

No

110

Each

0.0000

1

1

DAS
6 28
9-89 9-89

D117-837-111

BK117 Basket Mounting Provisions

D4784-011

Manufactured

No

110

Each

0.0000

1

1

DAS
28
9-89

D4784-011

Basket Assembly, Heavy Duty Lid, LH/RH

D4911-1

Manufactured

No

110

Each

9.0000

1

1

DAS
6 28
9-89 9-89

D4911-1

Bracket

BAS
27
9-89

Location

Loc Qty

Loc Code

ST136

9

121945
122824

5

4

D5106-041

Manufactured

No

110

Each

0.0000

4

4

DAS
6 28
9-89 9-89

D5106-041

Bracket Assembly

AN3-11A

Purchased

No

110

Each

162.0000

2

2

DAS
6 28
9-89 9-89

AN3-11A

Bolt

BAS
27
9-89

Location

Loc Qty

Loc Code

ST349

162

m134167

162

MAX 26 2016

April 15, 2016 3:59:54 PM

Shop Packet Print

Page 2

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

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Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition			Completed By																		
							Lead hand / Supervisor Approval Verification																		
							QC / QA Coordinator Approval																		
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐																	
OTHER : ☐																									

Picklist Print

April 15, 2016 3:59:54 PM

Page 3

Work Order ID: 144411

144411

Parent Item: D117-837-011

D117-837-011

Parent Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 5/30/2016

Required Date: 6/17/2016

Start Qty: 1.00

Required Qty: 1.00

AN4-12A
AN4-12A
Bolt

Purchased No

110 Each 200.0000 4 4

DAS 28
6 9-89

Location Loc Qty Loc Code

FG 10
120423 10
over003 125
m134606 125
ST344 65
m134180 65

DAS
27
9-89

MS21042-3 MS21042L3

Purchased No

110 Each 18.0000 2 2

134634

DAS 28
6 9-89

Location Loc Qty Loc Code

ST304 18
M129682 18

DAS
27
9-89

MS21042L4

Purchased No

110 Each 2,348.000 4 4

MS21042L 4
Locknut

Location Loc Qty Loc Code

GA 324
m133769 324
OVER007 1500
m134509 500
m134606 1000
ST303 427
m134055 9
m134502 418
ST305 97
m130922 97

DAS
27
9-89

DAS 28
6 9-89

MAY 26 2016

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Page 3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
☐ Environment	☐ Design	☐ Doc/Data	☐ Equip/Tooling	☐ Handling/Pre	☐ Material	☐ Internal Transport	☐ Tribal Knowledge
☐ LOA	☐ Substation	☐ Past Expiry Date	☐ Misidentified	☐ No Re-verification	☐ Operator	☐ Offset/Setup	☐ Supplier
				☐ Training	☐ Use for Testing	☐ Poor Information	☐ Rushing
				☐ Product Improvement	☐ Process Improvement	☐ Manufacturing Process	☐ Past Due
				☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ OTHER : _____			
				☐ Temperature/Cure	☐ Set-up	☐ BOM/Route	☐ Broken/Damage/Defect
				☐ Inspection Incomplete/Unqualified	☐ Contamination	☐ Countersink	☐ Cut Too Short
				☐ Instructions Incomplete/Unclear	☐ Drill Holes	☐ Power Loss/Surge	☐ Folio/Program
				☐ Grain	☐ Weld	☐ Wrong Stock Pulled	☐ Out of Sequence
				☐ Off-set	☐ Mislabeled	☐ Fit/Function	☐ Misaligned/off center
				☐ Positioned Wrong	☐ Outside Dimensions	☐ Over/Under tolerance	☐ Part Incorrect
				☐ Part Lost/Missing	☐ Part Moved	☐ Drawing	☐ Finish
				☐ Misread	☐ Turning Sequence		

Picklist Print

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Page 5

Work Order ID: 144411

144411

Parent Item: D117-837-011

D117-837-011

Parent Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 5/30/2016

Required Date: 6/17/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0416J

Purchased

No

110

Each

4,261.000

8

8

NAS1149D0416J

WASHER

DAS
28

DAS
6
9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

GA

237

m131511

237

ST260a

1984

m131511

1984

ST264

2040

m131511

2040

110

Each

1,915.000

2

2

NAS1149F0332P

Purchased

No

NAS1149F0332P

Washer

DAS
28

DAS
6
9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

GA

312

m133709

312

ST262

1603

m134134

103

m134257

1500

MAY 26 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																											
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DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D117-837 REV. B AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D117-837 REV. 1
REF. TCCA STC: SH13-22
REF. FAA STC: SR03353NY

1.0 Purpose

The purpose of this Dart Service Instruction (DSI) is to provide instructions to replace the D4911-3 Bracket with a D4911-5 Bracket for customers who already have D117-837-011 at CHG 002 or CHG 003. The D4911-5 Bracket will better distribute the drag load from the D117-837-011 Heli-Utility-Basket to the airframe in flight.

2.0 Removal of D4911-3 Bracket

- 2.1 For D117-837-011 Heli-Utility-Baskets at CHG 003, temporarily remove the D4794-043 Strut Assy from the D4911-1/-3 Brackets by disconnecting 2x MS17984-C405 quick release pin.
- 2.2 For D117-837-011 Heli-Utility-Baskets at CHG 002, temporarily remove the D4794-041 Strut Assy from the D4911-1/-3 Brackets by disconnecting AN4-7 bolts and associated Hardware from both ends of D4794-041 Strut Assy.
- 2.3 Remove the D4911-3 Bracket from airframe by removing 2x MS27039-1-08 Screws and 2x NAS1149F0332P washers.
- 2.4 Inspect the underlying aircraft structure for damage. If cracking/buckling of the aircraft structure is observed, repair per BK117 Aircraft Maintenance Manual Chapter 21-1.

3.0 Installation of D4911-5 Bracket

- 3.1 Temporarily remove LH/RH side cabin outboard floor panels as applicable.
- 3.2 Using D4911-3 Bracket as a template, transfer 2x $\varnothing 0.196$ " (#9 drill) holes from D4911-3 to new D4911-5 Bracket as shown in Figure 1.
- 3.3 Using the D4911-5 as a template, remove two rivets at STA 156.3 (3970) under the D4911-5 Bracket. Transfer drill these rivet holes to the D4911-5 Bracket as shown in Figure 1. Enlarge rivet holes to $\varnothing 0.196$ " (#9 drill) in the aircraft rib and on the D4911-5 Bracket. Transfer $\varnothing 0.098$ " (#40 drill) for MS21069L3 anchor nut and c/sink/dimple holes for NAS1097AD3-(4) rivet as shown in Figure 2. Deburr and touch-up aircraft holes with Alodine 1200/1201 per MIL-C-5541.
- 3.4 Install 2x MS21069L3 anchor nuts using NAS1097AD3-(4) rivets as shown in Figure 2.
- 3.5 Install D4911-5 Bracket into the aircraft ribs using 4x MS27039-1-08 screws and 4x NAS1149F0332P washers as shown in Figure 1. Torque screws to 20-25 in-lbs (2.3-2.8 N-m).
- 3.6 For D117-837-011 Heli-Utility-Baskets at CHG 003, install D4794-043 Strut Assy into D4911-1/-5 Brackets by connecting 2x MS17984-C405 quick release pin per ICA-D117-837 Rev.1.
- 3.7 For D117-837-011 Heli-Utility-Baskets at CHG 002, install D4794-041 Strut Assy into D4911-1/-5 Brackets by installing AN4-7 bolt, 2x NAS1149F0463P washer, AN310C4 nut, MS24665-151 cotter pin in both ends of D4794-041 Strut Assy per ICA-D117-837 Rev.0.
- 3.8 Re-install LH/RH side cabin outboard floor panels as applicable.
- 3.9 Repeat steps 3.1 to 3.8 for opposite side of the aircraft if the aircraft has been configured with basket provisions on both sides.

20160414

SH 144411

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO #01-O-01

APPROVED

BY: 
D. SHEPHERD (DE #02)

DATE: 14.09.03
CERT. NO.: SH13-22
ISSUE NO.: 1

A	NEW ISSUE	RF	14.09.03
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9706	SHEET 1 OF 3
APPROVED		TITLE	SCALE
DE APPR.		BRACKET MODIFICATION	NTS
DATE	14.09.03	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

4.0 Parts List

For D117-837-011 Heli-Utility-Baskets @ CHG 004, the Parts List in ICA-D117-837 and IIN-D117-837 should be updated as follows:

IS

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
2	D4911-5	BRACKET (REPLACES D4911-3)
8	MS21069L3	ANCHOR NUT
8	MS27039-1-08	SCREW
16	NAS1097AD3-4	RIVET
10	NAS1149F0332P	WASHER

WAS

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
2	D4911-3	BRACKET
4	MS21069L3	ANCHOR NUT
4	MS27039-1-08	SCREW
8	NAS1097AD3-4	RIVET
6	NAS1149F0332P	WASHER

For D117-837-011 Heli-Utility-Baskets @ CHG 002 or CHG 003, the DSI 9706-011 Basket Modification Kit is available from Dart.

Qty -011	Part Number	Description
X	DSI 9706-011	BRACKET MODIFICATION KIT
2	D4911-5	BRACKET
8	MS21069L3	ANCHOR NUT
8	MS27039-1-08	SCREW
16	NAS1097AD3-4	RIVET
8	NAS1149F0332P	WASHER

5.0 Weight & Balance

This DSI has a negligible effect on Weight & Balance

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 14.09.03
CERT. NO.: SH13-22
ISSUE NO.: 1

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED	HS	DRAWING NO. REV. A
MFG. APPR.	N/A	DSI 9706 SHEET 2 OF 3
APPROVED		TITLE SCALE
DE APPR.		BRACKET MODIFICATION NTS
DATE	14.09.03	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

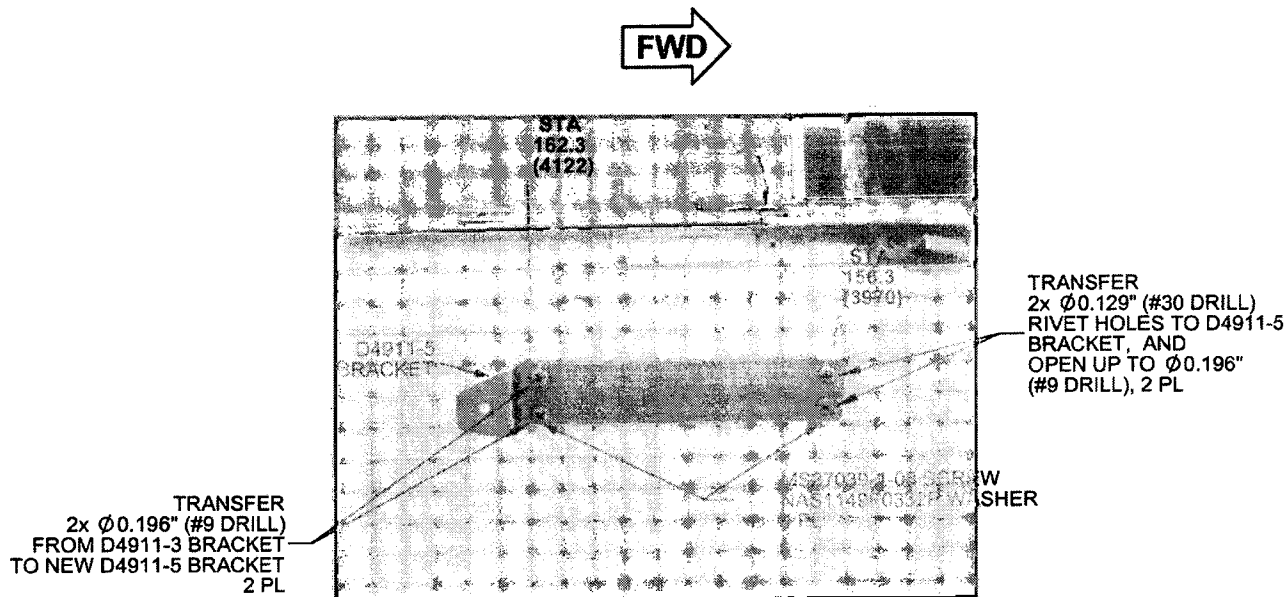


FIGURE 1. D4911-5 BRACKET INSTALLATION
(RH INSTALLATION SHOWN, LH OPPOSITE)

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 14.09.03
CERT. NO.: SH13-22
ISSUE NO.: 1

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9706	SHEET 3 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	BRACKET MODIFICATION	NTS
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DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D117-837 REV. B AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D117-837 REV. 1
REF. TCCA STC: SH13-22
REF. FAA STC: SR03353NY

1.0 Purpose

The purpose of this Dart Service Instruction (DSI) is to provide instructions to relocate and replace the basket strut assembly on the D117-837-011 Basket Installation for improved reliability in service. The new D5203-041 Strut Assy, D5204-1 Bracket and the D5205-1 Bracket replace the old D4794-043 Strut Assy and D4911-1/-5 Brackets for customers who have D117-837-011 Heli-Utility-Basket at CHG 002 thru CHG 004. The D5204-1 Bracket attaches to the fwd crosstube hardpoint bolt in order to move the drag load away from the aircraft skin structure.

2.0 Permanent Removal of D4911-1/-3/-5 Brackets

- 2.1 For D117-837-011 Heli-Utility-Baskets at CHG 003, remove and discard the D4794-043 Strut Assy by disconnecting 2x MS17984-C405 quick release pin.
- 2.2 For D117-837-011 Heli-Utility-Baskets at CHG 002, remove and discard the D4794-041 Strut Assy by disconnecting AN4-7 bolts and associated Hardware from both ends of D4794-041 Strut Assy.
- 2.3 For D117-837-011 Heli-Utility-Baskets at CHG 003, Discard the D4911-3 Bracket from airframe and reinstall 2x MS27039-1-08 Screws and 2x NAS1149F0332P washers.
- 2.4 For D117-837-011 Heli-Utility-Baskets at CHG 004, Discard the D4911-5 Bracket from airframe and reinstall 4x MS27039-1-08 screws and 4x NAS1149F0332P washers.
- 2.5 Repeat steps 2.3 to 2.4 for opposite side of the aircraft if the aircraft has been configured with basket provisions on both sides.
- 2.6 Remove the D4911-1 Bracket and associated hardware from the basket.
- 2.7 Inspect the underlying aircraft structure for damage. If cracking/buckling of the aircraft structure is observed, repair per BK117 Aircraft Maintenance Manual Chapter 21-1.

3.0 Installation of D5203-041 Strut Assy (RH strut installation shown, LH similar)

- 3.1 Remove the RH fwd crosstube aft p/n 105-50001.33 stepped washer (item 380) and replace with D5204-1 Bracket and NAS1149F0832P washer. Reinstall nut and torque per Aircraft Maintenance Manual. Reinstall split pin per Figure 1.
- 3.2 Install D5205-1 Bracket and associated hardware at basket rib shown in Figure 3.
- 3.3 Install D5203-041 Strut Assy onto D5204-1 Bracket and D5205-1 Bracket by connecting 2x MS17984-C405 Quick Release Pins as shown in Figures 2 and 3. Make adjustments to the AN665-34R threaded clevises and lock with NAS509-4C jam nuts. Secure the NAS509-4C jam nuts using lock wire per AC 14.13 or MS33540. After adjustment, use lockwire in the hole of the AN665-34R clevises to check for proper engagement of threads. It is acceptable to flip MS17984-C405 Quick Release Pin orientation as shown in Figures 2 and 3 to facilitate D5203-041 Strut Assy installation.
- 3.4 Repeat step 3.1 for opposite side of the aircraft if the aircraft is to be configured with basket provisions on both sides.

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BRANCH
DAO # 01-O-01

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BY: 
D. SHEPHERD (DE # 02)

DATE: 15.01.06
CERT. NO.: SH13-22
ISSUE NO.: 1

A	NEW ISSUE	RF	15.01.06
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9716	SHEET 1 OF 4
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DE APPR.		STRUT RELOCATION	NTS
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4.0 Parts List

For D117-837-011 Heli-Utility-Baskets @ CHG 005, the Parts List in ICA-D117-837 and IIN-D117-837 (as modified per DSI 9706 Rev. A) should be updated as follows:

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
1	D4784-011	BASKET ASSEMBLY, HEAVY DUTY, LH/RH
4	D5106-041	BRACKET ASSY
1	D5203-041	STRUT ASSY (REPLACES D4794-043)
2	D5204-1	BRACKET
1	D5205-1	BRACKET
2	AN3-11A	BOLT
4	AN4-12A	BOLT
2	NAS1149F0332P	WASHER
8	NAS1149F0416P	WASHER
2	NAS1149F0832P	WASHER
2	MS21042L3	NUT
4	MS21042L4	NUT

For D117-837-011 Heli-Utility-Baskets @ CHG 002 thru CHG 004, the DSI 9716-011 Strut Relocation Kit is available from Dart.

Qty -011	Part Number	Description
X	DSI 9716-011	STRUT RELOCATION KIT
1	D5203-041	STRUT ASSY (REPLACES D4794-043)
2	D5204-1	BRACKET
1	D5205-1	BRACKET
2	AN3-11A	BOLT
2	NAS1149F0332P	WASHER
2	NAS1149F0832P	WASHER
2	MS21042L3	NUT

5.0 Weight & Balance

This DSI has a negligible effect on Weight & Balance

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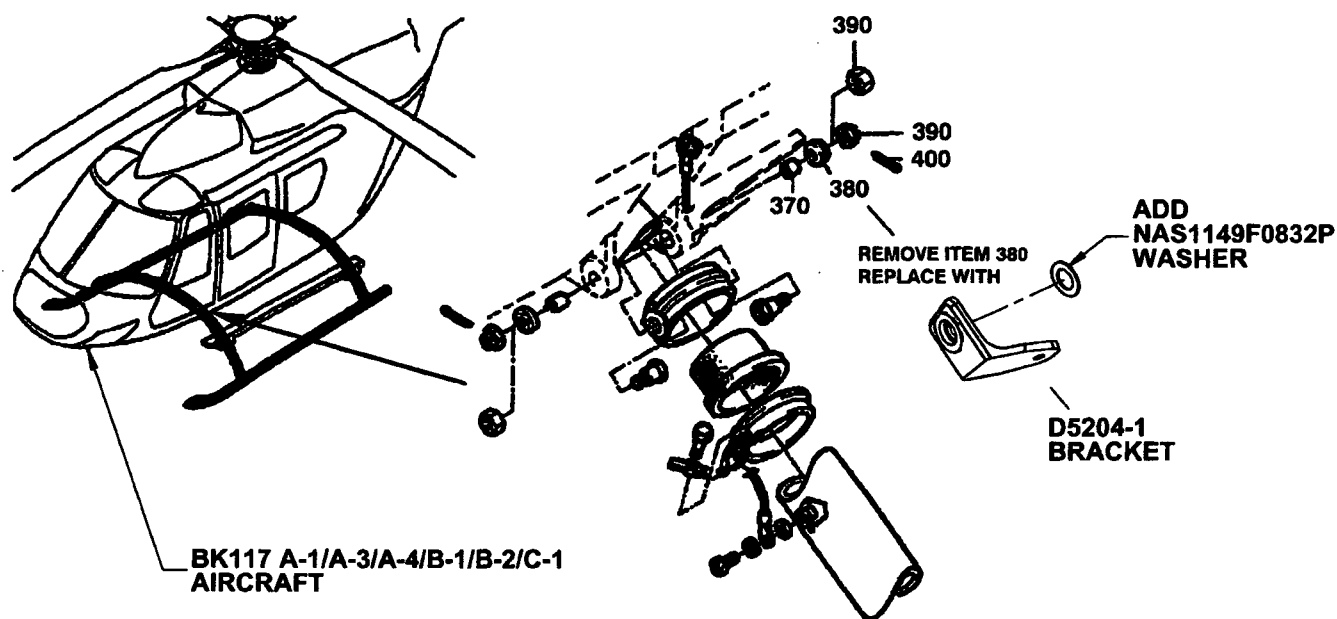


FIGURE 1. D5204-1 BRACKET INSTALLATION
(LH INSTALLATION SHOWN, RH OPPOSITE)

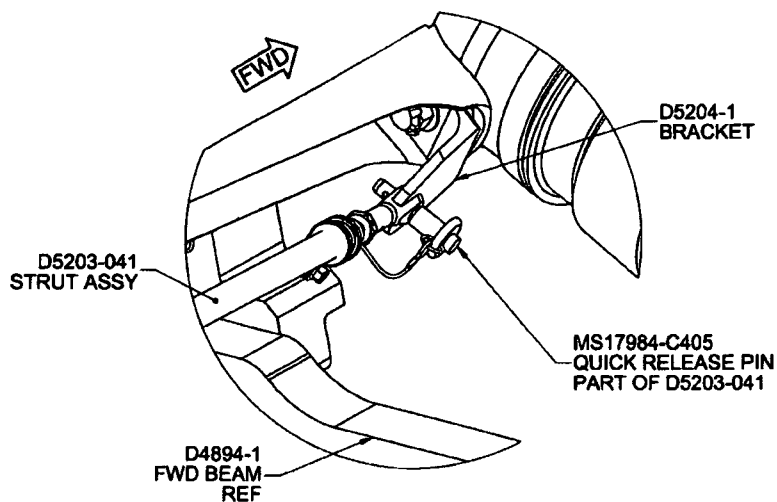


FIGURE 2. D5204-1 BRACKET INSTALLATION
(RH INSTALLATION SHOWN, LH OPPOSITE)
(BASKET & AIRCRAFT SKIN NOT SHOWN FOR CLARITY)

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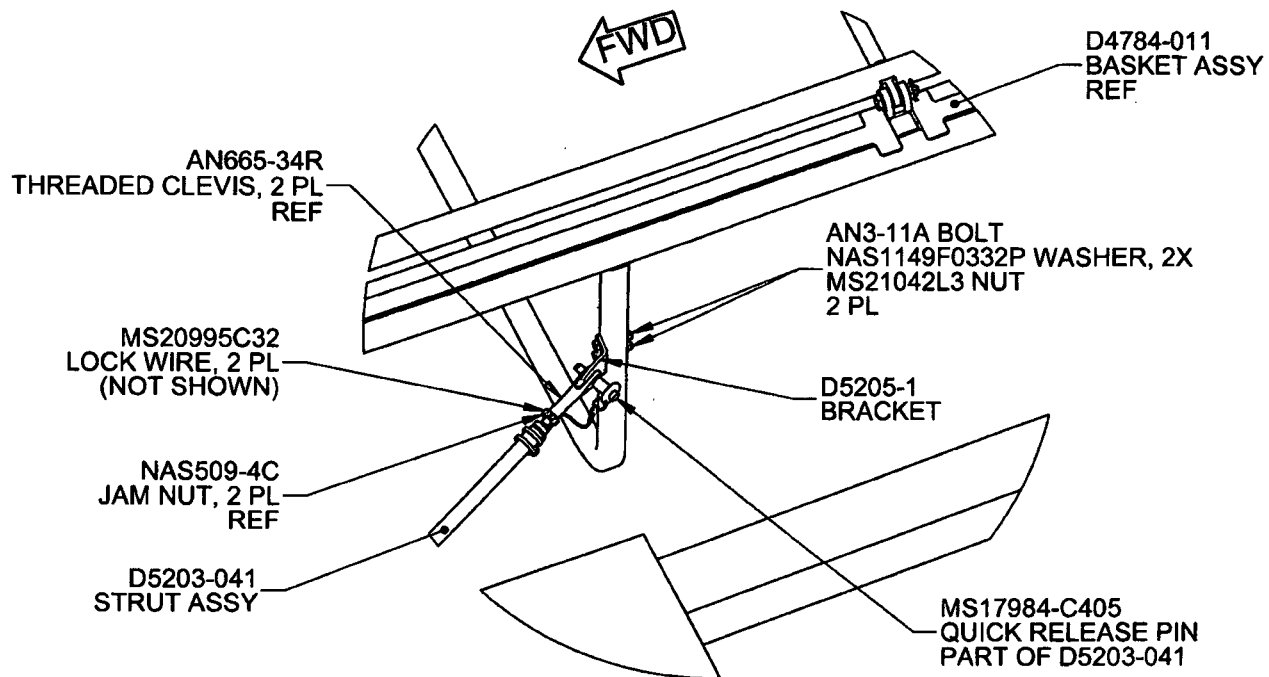


FIGURE 3. D5205-1 BRACKET INSTALLATION
(RH INSTALLATION SHOWN, LH OPPOSITE)

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REFERENCE ONLY

4.0 Parts List

For D117-837-011 Heli-Utility-Baskets @ CHG 004, the Parts List in ICA-D117-837 and IIN-D117-837 should be updated as follows:

IS

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
2	D4911-5	BRACKET (REPLACES D4911-3)
8	MS21069L3	ANCHOR NUT
8	MS27039-1-08	SCREW
16	NAS1097AD3-4	RIVET
10	NAS1149F0332P	WASHER

WAS

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
2	D4911-3	BRACKET
4	MS21069L3	ANCHOR NUT
4	MS27039-1-08	SCREW
8	NAS1097AD3-4	RIVET
6	NAS1149F0332P	WASHER

For D117-837-011 Heli-Utility-Baskets @ CHG 002 or CHG 003, the DSI 9706-011 Basket Modification Kit is available from Dart.

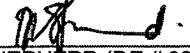
Qty -011	Part Number	Description
X	DSI 9706-011	BRACKET MODIFICATION KIT
2	D4911-5	BRACKET
8	MS21069L3	ANCHOR NUT
8	MS27039-1-08	SCREW
16	NAS1097AD3-4	RIVET
8	NAS1149F0332P	WASHER

5.0 Weight & Balance

This DSI has a negligible effect on Weight & Balance

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5.0 PARTS LIST

Qty -011	Qty -013	Qty -111	Part Number	Description
X			D117-837-011	HELI-UTILITY-BASKET, LH/RH
	X		D117-837-013	PROP ARM KIT
1		X	D117-837-111	BASKET PROVISION MOUNTING KIT
	1*		D2332-041	PROP ASSEMBLY (OPTIONAL)
	4*		D3953-9	WASHER
1			D4784-011	BASKET ASSEMBLY, HEAVY DUTY, LH/RH
1			D4794-043	STRUT ASSY
		2	D4893-1	HARDPOINT ADAPTER, LH
		2	D4893-2	HARDPOINT ADAPTER, RH
		1	D4894-1	FWD BEAM
		1	D4894-3	AFT BEAM
		1	D4895-045	FWD OUTBOARD BEAM ASSY
		1	D4895-047	AFT OUTBOARD BEAM ASSY
1			D4911-1	BRACKET
2			D4911-3	BRACKET
4			D5106-041	BRACKET ASSY
2			AN3-11A	BOLT
4			AN4-12A	BOLT
		4	AN4-17A	BOLT
		12	AN5-23A	BOLT
		12	MS20002C6	WASHER
2			MS21042-3	NUT
4		4	MS21042L4	NUT
		12	MS21042L5	NUT
		12	MS21042L6	NUT
4			MS21069L3	ANCHOR NUT
		12	MS21250-06022	BOLT
4			MS27039-1-08	SCREW
8			NAS1097AD3-4	RIVET
	3*		NAS1149C0463R	WASHER (or AN960C416)
8		8	NAS1149D0416J	WASHER (or AN960JD416L)
		24	NAS1149D0516J	WASHER (or AN960JD516L)
		12	NAS1149D0616J	WASHER (or AN960JD616L)
6			NAS1149F0332P	WASHER (or AN960-10L)

* D2332-041 PROP ASSEMBLY & HARDWARE (OPTIONAL) TO REPLACE D3969-3 GAS SPRING

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Revision: **B**

Date: 14.06.24

4.0 Parts List

For D117-837-011 Heli-Utility-Baskets @ CHG 005, the Parts List in ICA-D117-837 and IIN-D117-837 (as modified per DSI 9706 Rev. A) should be updated as follows:

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
1	D4784-011	BASKET ASSEMBLY, HEAVY DUTY, LH/RH
4	D5106-041	BRACKET ASSY
1	D5203-041	STRUT ASSY (REPLACES D4794-043)
2	D5204-1	BRACKET
1	D5205-1	BRACKET
2	AN3-11A	BOLT
4	AN4-12A	BOLT
2	NAS1149F0332P	WASHER
8	NAS1149F0416P	WASHER
2	NAS1149F0832P	WASHER
2	MS21042L3	NUT
4	MS21042L4	NUT

For D117-837-011 Heli-Utility-Baskets @ CHG 002 thru CHG 004, the DSI 9716-011 Strut Relocation Kit is available from Dart.

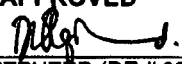
Qty -011	Part Number	Description
X	DSI 9716-011	STRUT RELOCATION KIT
1	D5203-041	STRUT ASSY (REPLACES D4794-043)
2	D5204-1	BRACKET
1	D5205-1	BRACKET
2	AN3-11A	BOLT
2	NAS1149F0332P	WASHER
2	NAS1149F0832P	WASHER
2	MS21042L3	NUT

5.0 Weight & Balance

This DSI has a negligible effect on Weight & Balance

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